UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,726	07/01/2003	Base V. Paul	390086.00010	6127

28382   7590   11/16/2007

QUARLES & BRADY LLP
411 E. WISCONSIN AVENUE
SUITE 2040
MILWAUKEE, WI 53202-4497

EXAMINER
MITCHELL, JASON D

ART UNIT	PAPER NUMBER
2193	

MAIL DATE	DELIVERY MODE
11/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/611,726	PAUL ET AL.
	Examiner	Art Unit	
	Jason Mitchell	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>03 October 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>*1-12 and 16-24*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>*1-12 and 16-24*</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-12 and 16-24 are pending in this application.

Response to Arguments

2.   **Applicant's arguments filed 10/3/07 have been fully considered but they are**

not persuasive.

3.   In the par. bridging pp. 8-9, Applicant broadly argues the claimed invention has

nothing to do with visual programming or providing a visual programming interface for

an image processing environment.

        The Examiner respectfully disagrees. First, it is noted that the title of the instant

application indicates the invention involves "Editing ... Image-processing Chains", and

further the claims recite primarily script editing functionality. Accordingly, the claimed

invention at least has something to do with programming, and providing a programming

interface. Further, it is only in claims 7 and 17-18 that the claims recite a editing the

program with a *text* editor thus providing a distinction over a *visual* editor. (note that this

limitation is made obvious by Koelma's disclosure of text editing as a less preferred

methodology on pg. 10, Section 5.4).

4.   In the last par. on pg. 9, the Applicant asserts Koelma does not disclose

"providing a plurality of image processing elements as self-contained modules which

can be executed individually in a plurality of different sequences" because "Nothing is

disclosed in the Kolema reference regarding executing image processing elements in a plurality of different sequences".

The Examiner respectfully disagrees. On pg. 8, in the 2nd full par. Koelma discloses a plurality of image processing elements as self contained modules (i.e. "the image processing functions in the library"). In the 3rd full par. on the same page Koelma discloses these image processing elements can be executed individually in a plurality of different sequences (i.e. "construct hierarchical data flow graphs from the function in a library"). Those of ordinary skill in the art would have recognized Koelma's interface as capable of creating a plurality of distinct data flow graphs and thus a plurality of different execution sequences.

5.   In the 1st par. on pg. 10, the Applicant asserts Koelma does not disclose "providing an image processing chain in a script file capable of execution by a script interpreter in a computer arranged to receive raw image data" because "Nothing is disclosed in the Kolema reference regarding providing an image processing chain in a script file capable of execution by a script interpreter in a computer arranged to receive raw image data" and "There is no mention of saving an image processing chain in a script file that is executed by a script interpreter. The cited sentence merely describes constructing hierarchical data flow graphs from function in a library." And further asserts "the Kolema reference discloses nothing about receiving or processing raw image data."

The Examiner respectfully disagrees. On pg. 8, in the 3rd full par. Koelma discloses an image processing chain in a script (i.e. "data flow graphs"). In the last

partial par. on the same page, Koelma discloses these image processing chains are executed by a script interpreter (i.e. "executed with the aid of the C-interpreter"). Further, on pg. 9, in the first full par. Koelma discloses, "visual programs can be stored and retrieved as visual program or ... C-programs". Those of ordinary skill in the art would have recognized the disclosed programs (including data flow graphs) would have been stored as files.

Further, given the broadest reasonable definition, 'raw image data' is image data, which has not yet been processed. Koelma discloses "image processing applications" (pg. 1, last par.) Those of ordinary skill in the art would have recognized that such an image processing application would take as input raw input data and process it.

6.   In the par. bridging pp. 10 and 11, the Applicant asserts Koelma does not disclose, "the image processing chain determines a selected sequence of execution of the image processing elements" because "Nothing is disclosed in the Kolema reference regarding the image processing chain determining the sequence of execution of the image processing elements. The cited sentence merely describes executing a data flow graph with a C-interpreter. It has nothing to do with the image processing chain determining the sequence of execution of the image processing elements".

On pg. 8 in the last partial par. Koelma discloses the image processing chain determines a selected sequence of execution (i.e. "The constructed data flow graph is executed"). Those of ordinary skill in the art would have recognized that a data flow

graph defines a data flow and thus the sequence (flow) in which the elements will be executed.

7.   In the first full par. on pg. 11, the Applicant asserts Koelma does not disclose, "relating the image processing chain to a clinical protocol, which is subsequently executed by the computer while running a compiled image processing computer program to process raw image data." Because "Nothing is disclosed in the Kolema reference regarding relating the image processing chain to a clinical protocol. A clinical protocol Is a medical procedure or process used for diagnosis of a medical condition or disease. The cited sentence merely describes storing and retrieving visual program, and storing visual program as C-programs, it has nothing at all to do with relating an image processing chain to a clinical protocol."

The examiner respectfully disagrees. As written, the limitation reciting "relating the image processing chain to a clinical protocol, which is subsequently executed" is very broad and does not indicate any specific steps required to perform the claimed 'relating'. Accordingly, "relating the image processing chain to a clinical protocol" is functionally equivalent to providing a file name (required for storing and retrieving a program as disclosed at Koelma, pg. 9, 2 full par.) for a data flow which identifies the data flow's intended use as part of a clinical protocol (e.g. 'MRI inversion'), which is subsequently executed (i.e. pg. 9, 2nd full par. "[stored programs] can be executed"). Thus the limitation does not present a patentable distinction over the cited reference.

8.   Starting in the first par. on pg. 12, applicant asserts distinctions addressed and

found unpersuasive with respect to claim 1 and additionally asserts Kolema does not

disclose "adding a new image processing element" because nothing is disclosed in the

Kolema reference regarding adding a new image processing element" (see the 1st par.

on pg. 13).

On pg. 5, in the 1st par. Koelma discloses adding a new image processing

element (i.e. "The addition of new image processing function"). Koelma's Fig. 2 makes

clear that the disclosed image processing functions are represented by elements.

9.   Applicant's arguments regarding the dependent claims (i.e. 2-12 and 17-20) rely

on the arguments presented against their respective parent claims and are thus

unpersuasive for the reasons given above.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   **Claims 1-2, 4-6, 16, 19, 21-22 and 24 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over "A visual programming interface for an image

processing environment" by Koelma and Smeulders (Koelma).

12.　　**Regarding Claim 1:** Koelma discloses a method for dynamically controlling the

sequence of execution of image processing algorithms (Title "A visual programming

interface for an image processing environment"), without recompiling an image

processing computer program (pg. 13, Section 5.6 "the program can be re-executed

immediately upon changes made to it"), the method comprising:

providing a plurality of image processing elements as self-contained modules,

which can be executed individually in a plurality of different sequences (pg. 8, "The

library handler (figure 2) gives a hierarchical overview of the image processing functions

in the library (or libraries) known to the interface.");

providing an image processing chain in a script capable of execution by a script

interpreter in a computer arranged to receive raw image data (pg. 8, "The worksheets

(figure 3) are used to construct hierarchical data flow graphs from the functions in a

library"; pg. 8, "The constructed data flow graph is executed with the aid of the C-

interpreter.");

wherein the image processing chain determines a selected sequence of

execution of the image processing elements (pg. 8, "The constructed data flow graph is

executed with the aid of the C-interpreter."); and

relating the image processing chain to a clinical protocol, which is subsequently

executed by the computer while running a compiled image processing computer

program to process raw image data (pg. 9, "visual programs can be stored and retrieved

as visual programs or they can be stored as C-programs.").

13.   The claim recites a plurality of 'image processing elements', whereas Koelma

discloses a plurality of 'image processing functions'. In the paragraph bridging pp. 7 and

8, Applicant discloses:

> An image "processing element" (PE) is a software entity that interfaces to a given
> image processing algorithm and interfaces it with the system. ... The script
> interpreter 46 will execute the image processing elements"

The 4th full par. on pg. 8 of Koelma discloses "connections between functions [are

made] by selecting an input pin and an output pin with the same data type" (i.e.

interfacing to an image processing algorithm). And further the par. bridging pp. 8 and 9

discloses "nodes that need to be executed are maintained in a list ... and the functions

in the list can be executed." (i.e. executing the image processing elements). In view of

this disclosure, the Examiner interprets the Koelma's "image processing functions" as

analogous to the claimed "image processing elements" and rejects the claim

accordingly.

14.   **Regarding Claim 2:** The rejection of claim 1 is incorporated; further Koelma

discloses the plurality of image processing elements in an image processing chain are

stored in a repository of image processing elements for easy access during image

processing chain editing operations (pg. 8, "The library handler (figure 2) gives a

hierarchical overview of the image processing functions in the library (or libraries)

known to the interface.").

15.   **Regarding Claim 4:** The rejection of claim 1 is incorporated; further Koelma

discloses the image processing chain be related to any one of a plurality of clinical

protocols (pg. 8, "combining several functions into a single visual function").

16.   **Regarding Claim 5:** The rejection of claim 1 is incorporated; further Koelma

discloses the method is carried out by an administration tool comprising a plurality of

image processing tools which can be installed on the computer associated with a

medical imaging apparatus (pg. 8, "The library handler (figure 2) gives a hierarchical

overview of the image processing functions in the library") and executing an image

processing application to process the raw image data into a processed image that can

be displayed on a monitor (pg. 8, "The constructed data flow graph is executed with the

aid of the C-interpreter."; Fig. 3, mon_image).

17.   **Regarding Claim 6:** The rejection of claim 1 is incorporated; further Koelma

discloses the plurality of image processing elements are generated in a tool command

language (pg. 5, Section 4 "The visual programming interface has been built on top of

the image processing environment SCIL_Image").

18.   **Regarding Claim 16:** Koelma discloses a method for adding an image

processing algorithm to a compiled image processing computer program (pg. 5, "The

addition of new image processing functions should become almost trivial"), without

recompiling the image processing computer program (pg. 13, Section 5.6 "the program

can be re-executed immediately upon changes made to it"), the method comprising:

providing a plurality of image processing elements as self-contained modules

which can be executed individually in a plurality of possible sequences (pg. 8, "The

library handler (figure 2) gives a hierarchical overview of the image processing functions

in the library (or libraries) known to the interface."); and

providing an image processing chain in a script file capable of execution by a

script interpreter in a computer arranged to receive raw image data (pg. 8, "The

worksheets (figure 3) are used to construct hierarchical data flow graphs from the

functions in a library");

adding a new image processing element (pg. 5, "The addition of new image

processing functions should become almost trivial");

configuring the image processing chain to determine the sequence of execution

of the image processing elements including the new image processing element (pg. 13,

Section 5.6 "the program can be re-executed immediately upon changes made to it");

and

relating the image processing chain to a clinical protocol, which is subsequently

executed by the computer while running the compiled image processing computer

program to process raw image data (pg. 9, "visual programs can be stored and retrieved

as visual programs or they can be stored as C-programs.").

19.   The claim recites a plurality of 'image processing elements', whereas Koelma

discloses a plurality of 'image processing functions'. In the paragraph bridging pp. 7 and

8, Applicant discloses:

> An image "processing element" (PE) is a software entity that interfaces to a given
> image processing algorithm and interfaces it with the system. ... The script
> interpreter 46 will execute the image processing elements"

The 4th full par. on pg. 8 of Koelma discloses "connections between functions [are

made] by selecting an input pin and an output pin with the same data type" (i.e.

interfacing to an image processing algorithm). And further the par. bridging pp. 8 and 9

discloses "nodes that need to be executed are maintained in a list ... and the functions

in the list can be executed." (i.e. executing the image processing elements). In view of

this disclosure, the Examiner interprets the Koelma's "image processing functions" as

analogous to the claimed "image processing elements" and rejects the claim

accordingly.

20.   **Regarding Claim 19:** The rejection of claim 16 is incorporated; further Koelma

discloses the plurality of image processing elements in an image processing chain are

stored in a repository of image processing elements for easy access during image

processing chain editing operations (pg. 8, "The library handler (figure 2) gives a

hierarchical overview of the image processing functions in the library (or libraries)

known to the interface.").

21.   **Regarding Claims 21 and 24:** Koelma discloses a method for constructing

image processing chains that can be easily edited for addition of new processing

algorithms (pg. 5, "The addition of new image processing functions should become

almost trivial"), the method comprising:

specifying image processing elements in an image processing chain (pg. 8, 3rd

full par. "construct hierarchical data flow graphs from the functions in a library");

applying the image processing elements in a sequence or in parallel to one or

more resulting images to be displayed (pg. 12, 2nd full par. "determine the functions that

can be executed in parallel");

defining inputs for each image processing dement (Fig. 1 "image in B - - Input

binary image");

defining outputs for each image processing element (Fig. 1, "image out B - -

Output binary image"); and

saving output images of different image processing chains (pg. 5, "ability to

create ... images.").

22.   The claim recites 'image processing elements', whereas Koelma discloses a

plurality of 'image processing functions'. In the paragraph bridging pp. 7 and 8,

Applicant discloses:

> An image "processing element" (PE) is a software entity that interfaces to a given
> image processing algorithm and interfaces it with the system. ... The script
> interpreter 46 will execute the image processing elements"

The 4th full par. on pg. 8 of Koelma discloses "connections between functions [are made] by selecting an input pin and an output pin with the same data type" (i.e. interfacing to an image processing algorithm). And further the par. bridging pp. 8 and 9 discloses "nodes that need to be executed are maintained in a list ... and the functions in the list can be executed." (i.e. executing the image processing elements). In view of this disclosure, the Examiner interprets the Koelma's "image processing functions" as analogous to the claimed "image processing elements" and rejects the claim accordingly.

23.   **Regarding Claim 22:** The rejection of claim 21 is incorporated; further Koelma discloses constructing additional image processing chains from smaller image processing chains (the par. spanning pp. 10 and 12, selecting the functions ... and combining them into a single function"), said smaller image processing chains being related in sequence or in parallel (pg. 12, 2nd full par. "determine the functions that can be executed in parallel").

24.   **Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over "A visual programming interface for an image processing environment" by Koelma and Smeulders (Koelma) in view of US 6,078,967 to Fulghum (Fulghum).**

25.   **Regarding Claims 3 and 20:** The rejections of claims 1 and 19 are incorporated, respectively; further Koelma does not disclose the repository of image processing

elements (pg. 8, "The library handler (figure 2)") is stored on a memory storage device

dedicated to that function and accessible by the computer.

26.   Fulghum teaches storing 'enabling algorithms' on a dedicated memory storage

device (col. 2, lines 50-56 "storing an enabling algorithm in a dedicated storage device

of the peripheral device")

27.   It would have been obvious to a person of ordinary skill in the art at the time of

the invention to store Koelma's enabling algorithms (pg. 8, "the image processing

functions in the library") on a dedicated storage device, as taught by Fulghum (col. 2,

lines 50-56 "a dedicated storage device of the peripheral device"), in order to "a

hierarchical overview of the image processing functions in the library" (Koelma pg. 8) "in

a manner that does not require a customer to administer a hard disk drive" (Fulghum

col. 2, liens 57-67).

28.   **Claims 7 and 17-18 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over "A visual programming interface for an image processing

environment" by Koelma and Smeulders (Koelma).

29.   **Regarding Claim 7:** The rejection of claim 1 is incorporated; further Koelma

discloses the image processing chain is generated with a text editor (pg. 10, Section 5.4

"in a textual interface, explicit variable names are used to denote intermediate results in

an application."; also see Fig 5) as a less preferred embodiment (pg. 10, Section 5.4 "It

is our experience that data flow graphs are a more natural way for a layman to express

image processing applications that textual interfaces").

30.   Accordingly it is Examiner's position the claim is unpatentable over

Koelma's disclosure of generating chains with a text editor (see e.g. Fig. 5).

31.   **Regarding Claim 17:** The rejection of claim 16 is incorporated; further Koelma

discloses relating the modified image processing chain to a clinical protocol, which is

subsequently executed by the computer while running the compiled image processing

computer program to process image data (pg. 9, "visual programs can be stored and

retrieved as visual programs or they can be stored as C-programs.").

32.   Further, as discussed in the rejection of claim 7, the claim is unpatentable over

Koelma's disclosure of generating chains with a text editor (pg. 10, Section 5.4 "in a

textual interface, explicit variable names are used to denote intermediate results in an

application."; also see Fig 5).

33.   **Regarding Claim 18:** The rejection of claim 17 is incorporated; further Koelma

discloses the method is carried out by an administration tool comprising a plurality of

image processing tools which can be installed on the computer associated with a

medical imaging apparatus (pg. 8, "The library handler (figure 2) gives a hierarchical

overview of the image processing functions in the library") and executing an image

processing application to process the raw image data into a processed image that can

be displayed on a monitor (pg. 8, "The constructed data flow graph is executed with the

aid of the C-interpreter."; also see the 3 'mon_image' icons shown in fig. 3).

34.   **Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over "A visual programming interface for an image processing

environment" by Koelma and Smeulders (Koelma) in view of Applicant admitted

prior art (AAPA).

35.   **Regarding Claim 8:** The rejection of claim 1 is incorporated; further Koelma

does not disclose that raw image data is received from a medical imaging apparatus but

does disclose that "[image processing] applications are frequently encountered in ...

medical ... image processing" (see pg. 4).

36.   Further, in the paragraph bridging pp. 1 and 2 of the instant specification, AAPA

indicates that it was known in the art, at the time of invention, to apply image processing

algorithms, as taught by Koelma (pg. 8, "the image processing functions in the library"),

to raw image data received from a medical imaging apparatus (pg. 1 "Medical imaging

equipment ... is used to obtain, process and store image data which can be processed

and displayed as images. ... Image processing algorithms are applied to the raw image

data, so that the image can be better viewed and analyzed by the medical

professional.")

37.   Accordingly, it would have been obvious to a person of ordinary skill in the art at

the time of the invenqtion to apply Koelma's "image processing functions" designed in

Koelma's "visual programming interface" to raw image data received from a medical

imaging apparatus, as disclosed by AAPA (pg. 1 "Medical imaging equipment ... is used

to obtain, process and store image data which can be processed and displayed as

images), because "The user interface of an image processing environment is a key

aspect of the proper functioning of such an environment" and because "A good user

interface can significantly reduce the development effort of new image processing

applications" (Koelma pg. Section 1).

38.   **Regarding Claims 9 and 11-12:** The rejection of claim 8 is incorporated for each

claim; further Applicant acknowledges that CT scanners, ultrasound imaging machines,

and x-ray RAD scanners were all known examples of medical imaging devices, and

thus as discussed in the rejection of claim 8, It would have been obvious to a person of

ordinary skill in the art at the time of the invention to apply Koelma's "image processing

functions" designed in Koelma's "visual programming interface" to raw image data

received from such medical imaging apparatus

39.   **Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over "A**

visual programming interface for an image processing environment" by Koelma

and Smeulders (Koelma) in view of AAPA and further in view of US 5,005,578 to

Greer et al. (Greer).

40.   **Regarding Claim 10:** The rejection of claim 8 is incorporated; further Koelma

and AAPA do not disclose receiving raw image data from an MR scanner.

41.   Greer teaches processing raw image data received from an MR scanner (col. 3,

lines 61-64 "machine-independent software modules which assess and correct

distortion, and which facilitate examination, manipulation and quantitative measurement

of MR images").

42.   It would have been obvious to a person of ordinary skill in the art at the time of

the invention to apply Koelma's "image processing functions" designed in Koelma's

"visual programming interface" to raw image data received from an MR scanner, as

disclosed by Greer (col. 3, lines 61-64), because "The user interface of an image

processing environment is a key aspect of the proper functioning of such an

environment" and because "A good user interface can significantly reduce the

development effort of new image processing applications" (Koelma pg. Section 1).

43.   **Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over "A**

visual programming interface for an image processing environment" by Koelma

and Smeulders (Koelma) in view of Official Notice.

44.   **Regarding Claim 23:** The rejection of claim 22 is incorporated; further Koelma

discloses the use of a condition in a data flow (Fig. 7 'condition'), but does not explicitly

disclose conditionally applying his image processing chains.

45.   Official notice is taken that 'conditional' functionality (e.g. "If ... Then ... Else") is

commonly used in programming and scripting.

46.   It would have been obvious to one of ordinary skill in the art at the time the

invention was made to include common conditional execution in Koelma's programming

environment to provide greater control over the disclosed data flow.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jason Mitchell whose telephone number is (571) 272-

3728. The examiner can normally be reached on Monday-Thursday and alternate.

Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Mitchell/
Jason Mitchell
10/31/07

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100